GESI

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Assessment Report and Closure Plan for the Chrome Plating Line Area

For:

Grenada Manufacturing, LLC
Grenada, Mississippi
ID No. MSD 007 037 278

Prepared by:
Global Environmental Solutions, Inc.
Marietta, Georgia

July 2002
GESI Project No. 98537.01

Docket Number 450833

GESI global environmental solutions, inc

July 23, 2002

Mr. Don Webster
RCRA Programs Branch - Waste Management Division
U.S. Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Subject: **Assessment Report and Closure Plan for the Chrome Plating Line Area**
Grenada Manufacturing, LLC Facility - Grenada, Mississippi
EPA ID No. MSD 007 037 278

Dear Mr. Webster:

On behalf of our client, Collins & Aikman, we are submitting the attached Assessment Report and Closure Plan for the Chrome Plating Line Area (SWMU 27) at the above referenced facility. This document was prepared in accordance with Module V-Solid Waste Management Units subsection V.8-Notification and Assessment Requirements for Newly Identified SWMU's and AOC's.

If you have any questions or comments regarding this document, please contact Brian Soucy at (770) 690-9552, ext. 221, or Don Williams of Grenada Manufacturing, LLC at (662) 226-1161.

Sincerely,
GLOBAL ENVIRONMENTAL SOLUTIONS, INC.

Brian A. Soucy, P.E.
President

cc: Louis Crawford, MS DEQ
Don Williams - Grenada Manufacturing, LLC
John Bozick - Arvin Meritor
John Devic – Collins & Aikman

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1.0 INTRODUCTION

This document contains the planned closure activities for the Chrome Plating Line Area located at the Grenada Manufacturing, LLC facility (hereafter referred to as Grenada Manufacturing) in Grenada, Mississippi. On March 27, 2002, GESI submitted the final closure report for the clean closure of the Chromium Destruct Pit (SWMU 14). During the Chromium Destruct Pit closure activities, soil samples were also taken from six boring locations in the area of the former Chromium Plating Lines. Three of the borings had soil samples that were in excess of the Region IX Preliminary Remediation Guidelines (Region IX PRGs) for hexavalent chromium (Figure 4). As a result of these analytical results, the Chrome Plating Line Area has been identified as an additional Solid Waste Management Unit (SWMU 27). As required by Section U.B.2 of Permit MSD 007 037 278, the facility notified the United States Environmental Protection Agency (US EPA) Region 4 by letter on March 26, 2002 of the existence of the new SWMU. In addition, as required in Section U.B.3 of the Permit, the facility is submitting this Assessment Report and Closure Plan. Assessment of this area was completed as part of closure of the Chromium Destruct Pit. U.S. EPA granted clean closure approval of this area in a letter to the facility dated April 4, 2002. Therefore, we are submitting this plan to close the chromium plating lines in place and place additional restrictions on the use of this area of the property via deed restrictions.

1.1 Facility Description and History

The facility is located at 635 Highway 232 East in Grenada, Mississippi as shown in Figure 1, and is situated at a latitude of 33° 48' 16" and a longitude of 89° 47' 30". The location of the Chromium Plating Lines is shown in Figure 2.

The facility was constructed in 1960 by Lyons, Inc. In 1966, the facility was purchased by North American Rockwell (now Arvin Meritor). Textron Automotive Company (formerly Randall-Textron) purchased the site in 1985. Grenada Manufacturing purchased the facility in 1999 from

Textron, Inc. The facility produces metal parts for automotive and other applications. Operations at the facility have included metal stamping, rolling, welding, cleaning, buffing, plating, and painting. Chromium plating operations were discontinued on January 19, 2001.

1.2 Chrome Plating Line Background Information

The Chrome Plating Line Area consists of three separate pits, installed between 1961 and 1964, originally containing chrome plating equipment. This equipment consisted of steel and composite tanks set into the containment pits with each tank performing a separate function within the chrome plating process. Typical operations included cleaning, etching, and plating. The approximate location of the chrome plating line area is shown in Figure 2. Figure 3 shows detail of the overall size of each containment pit (approximately 17 feet x 100 feet). Each pit is approximately 4 feet deep. In the early 1990s, an internal dike was installed separating the non-chrome from the chrome process equipment. In addition, there is concrete dunnage located along the bottom of the pits that were used to support the plating line tanks and associated equipment. Rinse water from the chrome plating lines originally drained to the Chromium Destruct Pit. After the internal dike was installed to separate the non-chrome from the chrome process equipment, rinse waters from only the chrome side of the plating operations drained to the Chromium Destruct Pit. The hexavalent chrome was reduced to trivalet chrome in the Chromium Destruct Pit before being transferred to an on-site equalization lagoon. In the early 1990s, after closure of the on-site equalization lagoon, treated water from the Destruct Pit was diverted from the equalization lagoon and discharged through the wastewater treatment plant. After July 1993, discharge from the destruct pit to the lagoon and wastewater treatment system was halted and the chromium was recovered from the rinse water. The Destruct Pit was then used to collect rinse water from the chromium plating lines, prior to recovery in the on-site recovery system, for subsequent reuse in the plating lines.

these are not cleanup levels!

1.3 Characterization and Assessment

Closure of the Chromium Destruct Pit (SWMU 14), and the adjacent chrome plating line area, was based upon Region IX PRG target cleanup levels for chromium with additional consideration given to Industrial Risk Based Concentrations (RBCs) published by United States Environmental Agency Region III.

During closure activities, soil sampling was performed in the chrome plating lines in the areas believed most likely to exhibit chrome contamination based upon visual inspection and knowledge of the plating operations. A total of nine soil borings were advanced with samples taken at depths ranging from 0 feet (surface) to 20 feet below ground surface. At each boring location, three soil samples were taken and analyzed for hexavalent and total chromium. Trivalent chromium concentrations were calculated by subtracting the hexavalent chrome results from the total chrome results. The boring locations and sampling results are shown in Figure 4. Table 1 summarizes the sampling data and cleanup goals.

Samples from six of the nine borings had hexavalent chromium concentrations above the Region IX PRGs, but well below the Industrial Risk Based Concentration for hexavalent chromium of 6,100 mg/Kg. There were no samples with trivalent chromium above the Region IX PRG's for soil.

The highest concentrations of hexavalent chromium were 2,680 mg/Kg (boring PL-2, Middle) and 1,680 mg/Kg (boring SS-3, Middle). Boring PL-2 is located at the south end of Plating Line 2 while boring SS-3 is located near the junction of the drain lines leading from Plating Line 2 and Plating Line 3. Although four additional borings showed concentrations of hexavalent chromium above the Region IX PRG level of 64 mg/Kg, they were substantially lower than those concentrations detected in PL-2 and SS-3 (ranging from 70 mg/Kg to 600 mg/Kg).

Only three borings taken outside of the plating line containment area exhibited hexavalent chromium concentrations above the Region IX PRGs (SS-1-Middle – 138 mg/Kg, SS-2 – Middle

– 70 mg/Kg, SS-3 – Middle and Bottom – 1680 and 1540 mg/Kg, respectively). Each of these three borings was located adjacent to the drain line that originally connected the plating lines to the chromium destruct pit. The contamination found in these areas may have resulted from leaking joints in this piping near the junctions.

Relatively low concentrations of hexavalent chromium were detected in the areas that were expected to be contaminated. The soil sampling results from the chrome plating lines indicate that these areas are not a source of ongoing chromium contamination. This is further supported by ground water data collected in the vicinity of the plating lines. Figures 5 and 6 present data of hexavalent chromium concentrations in ground water wells located down-gradient of the chrome plating lines. Specifically, monitoring wells MW-23 and RT-2 show a steep drop in total chromium concentrations in the ground water after closure of the equalization lagoon on February 14, 1995.

2.0 CLOSURE ACTIVITIES

The following are the proposed activities for closure of the Chrome Plating Line Area. In preparation for the closure, the facility discontinued chromium plating operations on January 19, 2001, and clean closed the Chromium Destruct Pit (SWMU 14) on March 27, 2002.

2.1 Summary of Closure Steps

An illustration of the layout of the chromium plating lines and the affiliated piping is included on Figure 3.

2.1.1 Chrome Plating Lines

Previous activities associated with closure of the Chromium Destruct Pit involved removal of equipment and cleaning of the three former chrome plating line pits and associated drainage sumps and piping. After cleaning and sampling activities were complete, the Chromium Destruct Pit was filled with compacted sandy soil and topped with a minimum 6-inch thick concrete slab. The acid bath drain piping connecting the chrome plating line pits with the destruct pit was plugged with concrete mortar at the point of entry into the pit before final placement of the concrete slab.

Closure of the three former plating line containment pits will be done in a manner similar to that of the Chromium Destruct Pit. As shown on Figure 4, the remainder of the acid bath piping and sumps (3) will be filled using a cementitious, non-shrink grout. Each plating line pit will be filled with clean, sandy soil and compacted in lifts during placement. The final lift, approximately 8 to 12 inches, will consist of a concrete slab poured in place and finished to grade with the elevation equal to that of the surrounding floor.

At the conclusion of construction activities, Grenada Manufacturing will file a deed amendment to indicate that a RCRA closure of the Solid Waste Management Units was completed on this

portion of the property. In addition, future uses, including residential construction, may be limited or prohibited on the Solid Waste Management Units.

2.2 Closure Certification

An independent, registered Professional Engineer (P.E.) will be retained to certify that the closure of the Chrome Plating Line Area was conducted in accordance with the approved Closure Plan. The registered P.E. and Grenada Manufacturing will certify closure. The closure certification will follow the guidelines of 40 CFR Part 264.115.

2.3 Future Site Utilization

In order to utilize the square footage formerly occupied by the chrome plating lines, Grenada Manufacturing anticipates that new equipment will be installed in this area for additional production capacity. To the extent that excavation is required for future installation of new manufacturing equipment, soils excavated from the former chrome plating line area should be analyzed for leachable metals, specifically chromium, to determine if it exhibits hazardous characteristics. Excavated materials that exhibit hazardous characteristics shall be staged, handled and disposed as hazardous waste and managed accordingly. Any modifications to the concrete slab over the former chrome plating lines shall be consistent with this closure plan and measures must be taken to ensure that integrity of the Solid Waste Management Unit is maintained in its closed form. In addition, no modifications to the concrete slab may be undertaken that will cause the release of hazardous contaminants.

3.0 IMPLEMENTATION SCHEDULE

The Closure Plan activities will be completed following the schedule presented on Figure 7.

4.0 HEALTH AND SAFETY PLAN

The existing Health and Safety Plan (HASP) will be used for the proposed work. Subcontractors hired to perform Site work will be required to have their own HASP and abide by all plant safety procedures.

5.0 REPORTING

The closure activities will be documented in a report that will follow, as appropriate, the outline below.

- Background information
- Summary of closure activities
- Recommended additional activities, if any
- Certification of closure

TABLES

Table 1 - SWMU 27 - Chrome Plating Line Area Assessment Data with applicable Region IX PRG's and Region III RBC's (all values are in mg/kg)

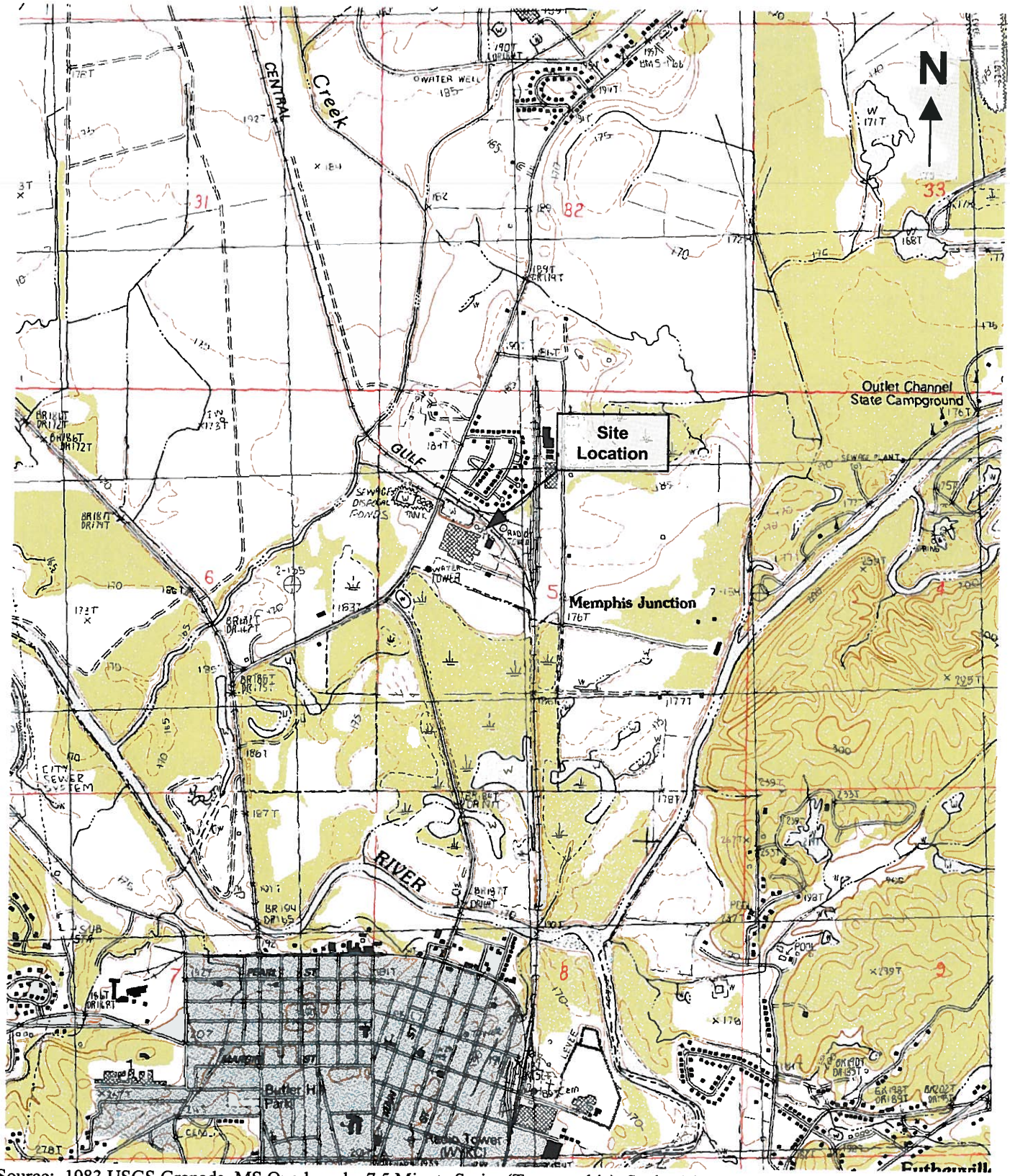
Sample ID	Cr^{+3}	Cr^{+6}	Total Chrome
Region IX PRG Level	*10,000*	*64*	
Region III RBC Level	*----*	*6,100*	
SS-1 Top	9.21	ND	9.21
SS-1 Middle	217	**138**	355
SS-1 Bottom	17.4	7	24.4
SS-2 Top	8.93	ND	8.93
SS-2 Middle	141	**70**	211
SS-2 Bottom	9.45	0.4	9.85
SS-3 Top	16	ND	16
SS-3 Middle	1020	**1680**	2700
SS-3 Bottom	6230	**1540**	7770
SS-4 Top	10.3	ND	10.3
SS-4 Middle	8.1	ND	8.1
SS-4 Bottom	8.24	0.4	8.64
SS-5 Top	16.3	0.2	16.5
SS-5 Middle	138.8	0.2	139
SS-5 Bottom	78.9	1	79.9
SS-6 Top	9.24	ND	9.24
SS-6 Middle	389	42	431
SS-6 Bottom	118.8	2.2	121
PL-1 Top	1880	**600**	2480
PL-1 Middle	378	**480**	858
PL-1 Bottom	147.6	0.4	148
PL-2 Top	3880	**2220**	6100
PL-2 Middle	4660	**2680**	7340
PL-2 Bottom	2010	**960**	2970
PL-3 Top	30.3	ND	30.3
PL-3 Middle	363	**160**	523
PL-3 Bottom	15.1	ND	15.1

Note 1: Values shown in **BOLD** are above the Region IX PRG for Industrial Soil for hexavalent Chromium of 64 mg/kg

Note 2: Region IX PRG's and Region III RBC's shown are for soil only

Note 3: Cr^{+3} concentration = Total Chrome - Cr^{+6}

FIGURES



Source: 1983 USGS Grenada, MS Quadrangle, 7.5 Minute Series (Topographic), Scale: 1 in. ~ 2,000 ft.

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SITE LOCATION MAP

PROJECT NO. 98537.01 FIGURE 1

PIEZ WELL MW-23

RT-2

PIEZ WELL MW-24

SWMU 14
(Chrome Destruct Pit)

MAIN PLANT BUILDING

184

N 65°54'29" W
25.00

PIEZ WELL MW-3

182

SWMU 27
(Chrome Plating Line Area)

GRAPHIC SCALE IN FEET

0 30 60 120 180

60

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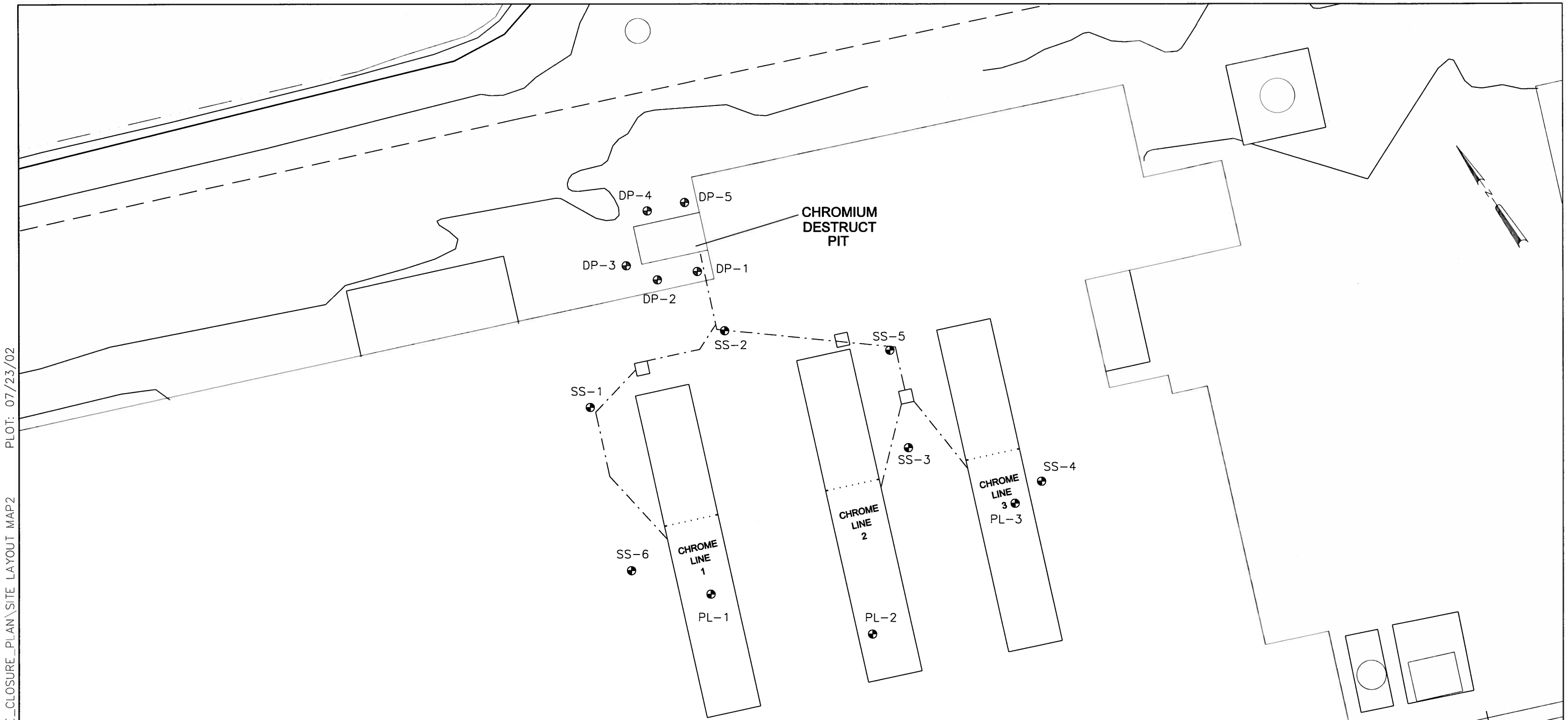
SITE LAYOUT MAP

PROJECT NO. 98537.01

FIGURE NO. 2

PLOT: 07/23/02

DWG: P:\...TEXTRON\GRENADA\PLATING_LINE_CLOSURE_PLAN\SITE LAYOUT MAP2



LEGEND

- SAMPLING LOCATION (APPROXIMATE)
- MANHOLE
- DIVIDING WALL IN CONTAINMENT DIKE
- UNDERGROUND CHROMIUM DRAINAGE PIPING

GRAPHIC SCALE IN FEET

0 15 30 60 90

30

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PLATING SYSTEM LAYOUT

PROJECT NO. 98537.01

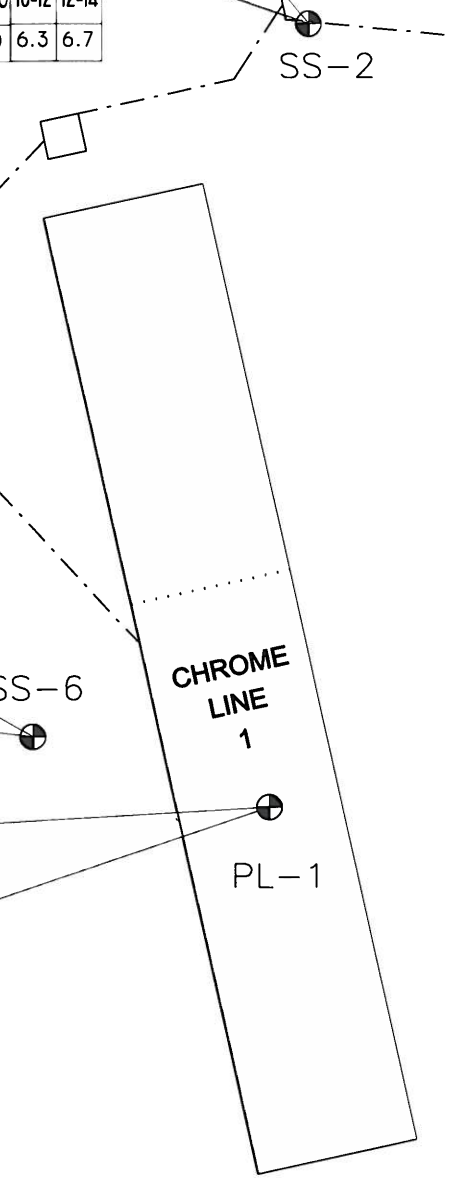
FIGURE NO. 3

PLOT: 07/23/02

DWG: P:\...TEXTRON\GRENADA\PLATING_LINE_CLOSURE_PLAN\SITE LAYOUT MAP2

LEGEND

- BORING LOCATION (APPROXIMATE)
- MANHOLE (APPROXIMATE)
- DIVIDING WALL IN CONTAINMENT DIKE
- UNDERGROUND CHROMIUM DRAINAGE PIPING (LOCATION IS APPROXIMATE)



SS-2 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	8.93
Middle	70	211
Bottom	0.4	9.85

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	5.6	5.7	5.6	5.4	6.0	6.3	6.7

SS-5 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	0.2	16.5
Middle	0.2	139
Bottom	1.0	79.9

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16
pH	7.1	6.9	7.3	7.2	7.8	7.9	7.8	7.5

SS-1 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	9.21
Middle	138	355
Bottom	7.0	24.4

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	5.2	5.4	5.8	5.4	5.8	5.5	6.0

SS-3 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	16.0
Middle	1680	2700
Bottom	1540	7770

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	6.6	6.6	5.9	3.7	3.8	3.8	3.9

SS-6 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	9.24
Middle	42	431
Bottom	2.2	121

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20
pH	7.1	7.6	7.3	7.8	6.9	6.0	5.8	6.0	5.4	6.3

SS-4 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	10.3
Middle	ND	8.10
Bottom	0.4	8.64

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16
pH	8.4	8.7	8.1	8.0	7.8	7.7	7.8	7.6

PL-1 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	600	2480
Middle	480	858
Bottom	0.4	148

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	8.2	7.5	7.8	5.4	5.4	5.1	5.3

PL-3 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	ND	30.3
Middle	160	523
Bottom	ND	15.1

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16
pH	6.4	6.2	8.5	9.3	9.1	8.7	8.6	8.6

PL-2 (MG/KG)

Depth By Each Location	Chrome (Hex)	Chrome (Total)
Top	2220	6100
Middle	2680	7340
Bottom	960	2970

Depth (Feet)	0-2	2-4	4-6	6-8	8-10	10-12	12-14
pH	4.2	3.3	3.9	4.1	3.5	4.0	3.7

NOTES:

1.) BORING LOCATIONS AND DEPTHS ARE APPROXIMATE

2.) "TOP" REFERS TO SAMPLE LOCATION AT THE TOP OF THE BORING, BELOW THE SOIL SURFACE.

3.) "BOTTOM" REFERS TO SAMPLE LOCATION ABOVE GROUNDWATER.

4.) "MIDDLE" REFERS TO SAMPLE LOCATION BETWEEN "TOP" AND "BOTTOM".

5.) REGION IX PRELIMINARY REMEDIATION GUIDELINES (PRGS) FOR INDUSTRIAL SOIL:
CHROME (HEXAVALENT) 64 mg/Kg
CHROME (TRIVALENT) 10,000 mg/Kg

6.) PLATING LINE PITS ARE APPROXIMATELY 4 FEET BELOW PLANT FLOOR.

GRAPHIC SCALE IN FEET
0 10 20 40 60
20

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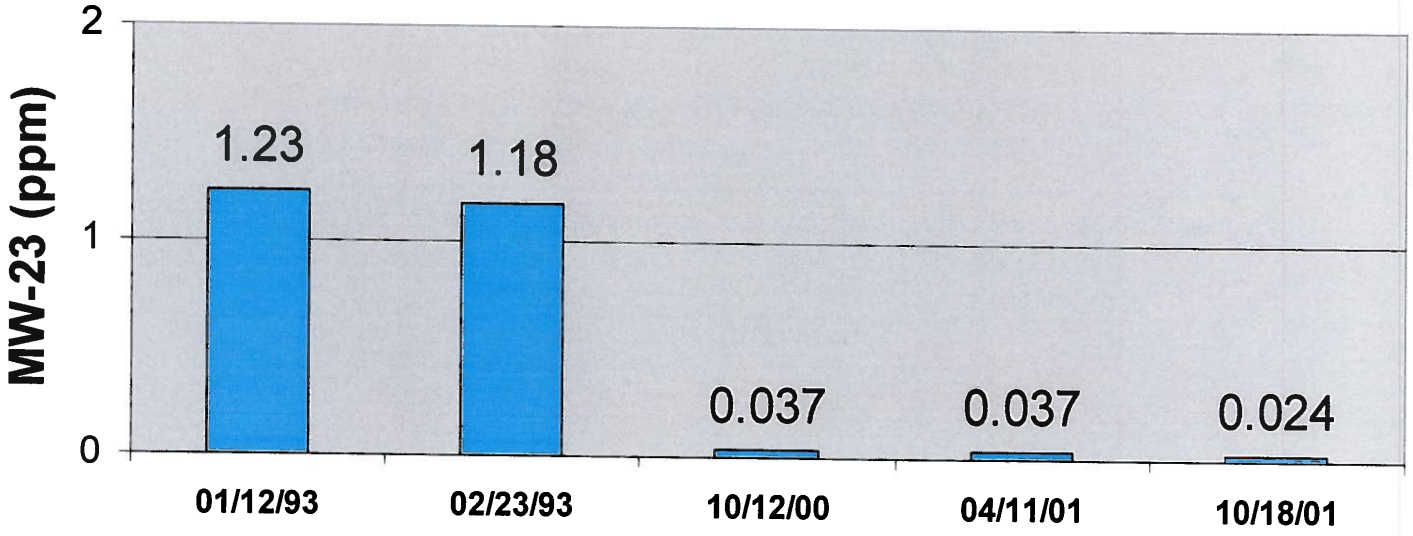
SWMU 27 - CHROME PLATING LINE AREA ASSESSMENT DATA

PROJECT NO. 98537.01 FIGURE NO. 4

DWG: P:\...TEXTRON\GRENADA\PLATING_LINE_CLOSURE_PLAN\SITE LAYOUT MAP2 PLOT: 07/23/02

Total Chromium in Ground Water
Monitoring Well MW-23



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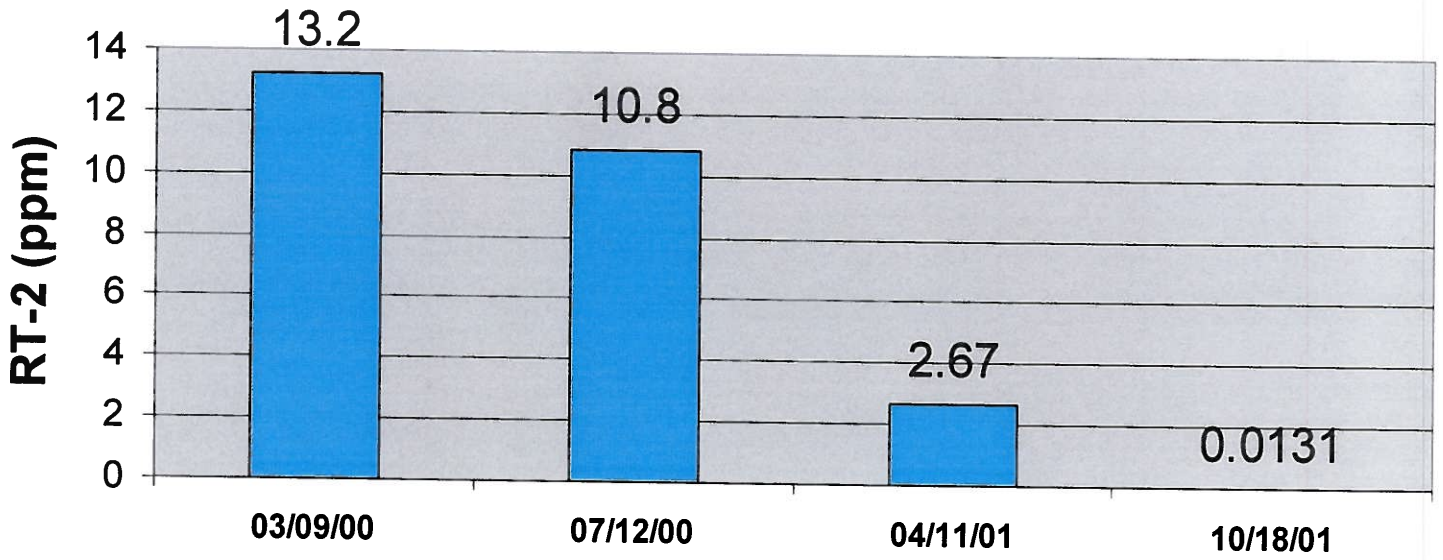
Total Chromium in Ground Water
Monitoring Well MW-23

PROJECT NO. 98537.01

FIGURE 5

Total Chromium in Ground Water
Monitoring Well RT-2



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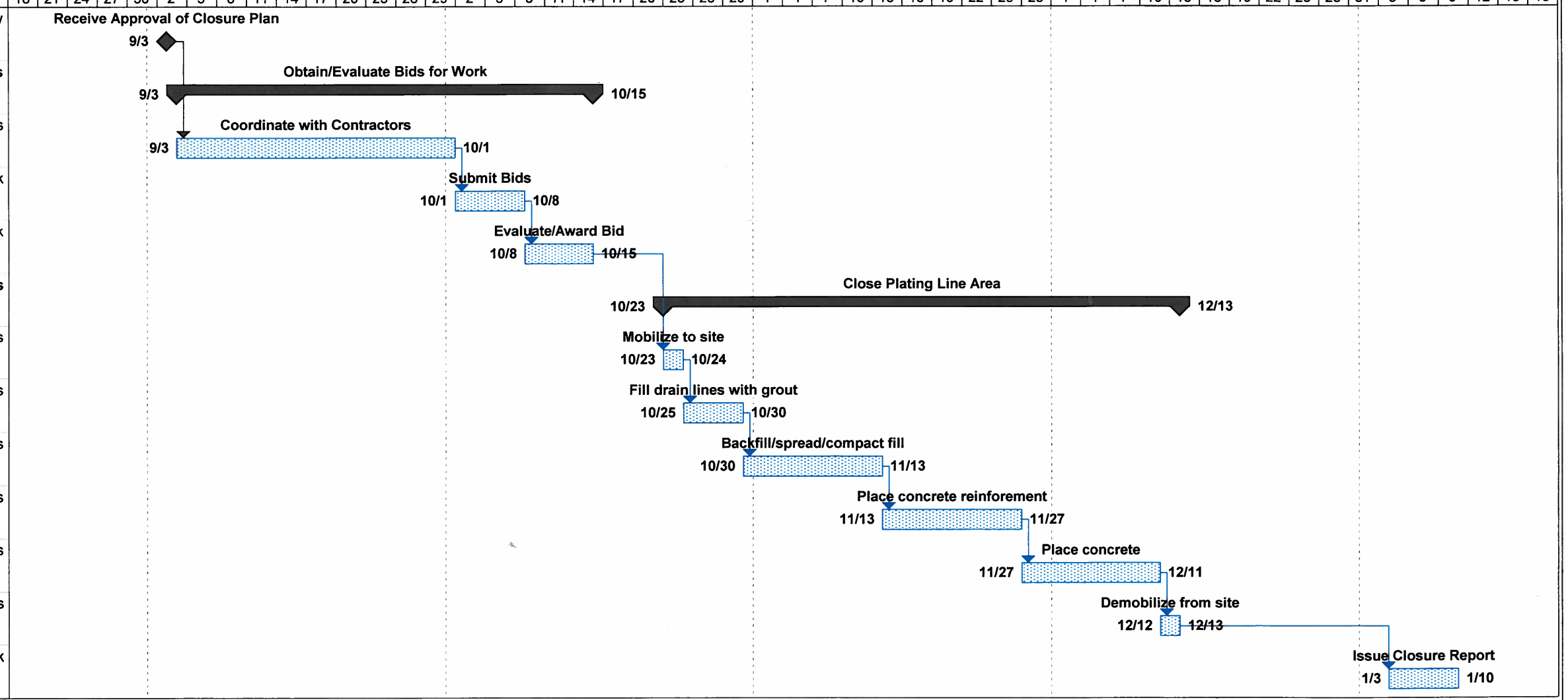
Total Chromium in Ground Water
Monitoring Well RT-2

PROJECT NO. 98537.01

FIGURE 6

Figure 7
Closure Activity Schedule
Chrome Plating Line Area Closure
Grenada Manufacturing, LLC - Grenada, Mississippi
GESI Project No. 98537.01

ID	Task Name	Duration
1	Receive Approval of Closure Plan	1 day
2	**Obtain/Evaluate Bids for Work**	**30 days**
3	Coordinate with Contractors	4 ewks
4	Submit Bids	1 ewk
5	Evaluate/Award Bid	1 ewk
6	**Close Plating Line Area**	**38 days**
7	Mobilize to site	2 days
8	Fill drain lines with grout	4 days
9	Backfill/spread/compact fill	2 ewks
10	Place concrete reinforement	2 ewks
11	Place concrete	2 ewks
12	Demobilize from site	2 days
13	Issue Closure Report	1 ewk



Project: Grenada Chrome Plating Line Area Closure
Date: Mon 7/22/02

Task	Milestone	Rolled Up Split	External Tasks		
Split	Summary	Rolled Up Milestone	Project Summary		
Progress	Rolled Up Task	Rolled Up Progress			